



Stormwater Needs Assessment Project

FAIRFAX COUNTY STORMWATER NEEDS ASSESSMENT PROJECT PHASE II OF THE WATERSHED COMMUNITY NEEDS ASSESSMENT AND FUNDING OPTIONS STUDY

Executive Summary:

Upon completion of the initial Fairfax Watershed Community Needs Assessment and Funding Options report, the findings of which were presented to the Board of Supervisors' Environmental Committee in July 2004, a citizen Stormwater Advisory Committee (SAC) was appointed by the Board to assist in refining the scope of services for the stormwater program as well as evaluate the creation of a dedicated funding source. Over the past eight months, the Consultant Team, staff and the Advisory Committee have focused on defining a level of service and funding strategy that is presented in this preliminary report. Included in this report are the findings and recommendations of the Consultant Team on specific resource needs driven by the priorities and level of service defined through the assistance of the SAC.

Included in this report are findings regarding the final recommended six year program plan, cost of the services defined in the program and preliminary analysis of a dedicated funding strategy, including an analysis of the financial impact on various classes of properties in the County.

Program Highlights:

- Implementation of Capital Improvement Program driven by updated Watershed Plans, beginning with the Little Hunting Creek Watershed Plan adopted by the Board. In addition, it is anticipated that the Popes Head Creek Watershed Plan will be completed and adopted in Year One of the Program Plan and will also be part of the initial investment strategy. It is estimated that implementation of the Watershed Plans capital improvement needs will be \$500 to \$800 million. At the current level of funding for the CIP program, it would take 250 years to address the backlog.
- Compliance with the Municipal Separate Storm Sewer System permit (MS4), which requires the County to implement specific strategies and Best Management Practices (BMPs). This permit will be renewed in calendar year 2006 and requires finalization of the current permit terms (in Year One of the program) and negotiation of the renewal (in the first half of Year Two). It is anticipated that the next permit term will be more demanding due to recent actions of the State regarding the Potomac Tributary Strategy. The County's MS4 permit is a target for incorporation of goals on nitrogen and phosphorus removal from urban streams.
- Reinvestment in the existing infrastructure to retrofit stormwater management facilities to provide both water quantity and water quality protection. The current system owned and operated by the County includes 1,400 miles of underground pipe, over 800 miles of streams, and 1,100 stormwater management facilities. A



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significant portion of the system has been in place for over 50 years and the County will be challenged to maintain its performance as it reaches the end of its useful life. The County can expect an increase in system failure if a rehabilitation program is not funded.

- Education of the community on water quality protection, watershed management, pollution prevention and other key elements of stormwater program. Much will be demanded of the County as State and Federal mandates for water quality protection are expanded and new standards for control of nitrogen and phosphorus in streams that drain to the Potomac and ultimately to the Chesapeake Bay are established. If the current voluntary program is not successful in providing protection and improvement to the Bay, it is expected that the “voluntary” strategy will be shifted to a mandate, based on a Total Maximum Daily Load (TMDL) allocation. The public needs to understand the challenge and their role in protecting and improving water quality and stream health.
- Expanded long-term system maintenance strategies and program resources to ensure that the system performs as designed. Current maintenance resources can only respond to high priority problems. In addition, the time of response is increasing as more needs are identified. Maintenance services are integral part of ensuring achievement of performance goals for the stream system. Optimization of the existing system contributes to a sustainable level of service that will ultimately provide effective protection of the environment.
- Finalization of the Watershed Plans updates. The current schedule for completion of the Watershed Plans is 2010. The Chesapeake Bay Program supported by the Potomac Tributary Strategy, has a target date of 2010 to achieve the goals; however, a number of the Watershed Plans will not be updated in sufficient time to contribute to the voluntary goals of these Federal and State regulatory efforts. It is important that the County update their Plans as soon as possible to allow for an effective prioritization plan for investment in implementation. A focus of the comprehensive program is to complete the Plan updates in the first two years, so that implementation can begin in all areas of the County as soon as possible.
- Sustain on-going initiatives in stream assessment, water quality monitoring and other integral components of a comprehensive program of services that support key elements of CIP, maintenance, and planning.

Cost of Service

To achieve the goals of the six year program plan, an evaluation of the cost of services was completed. Currently the County invests approximately \$11.5 million for stormwater program elements (based on evaluation of the FY 2004 and FY 2005 budgets). Costs are captured in great detail in the cost model. Below they are summarized by broad categories of Engineering and Design, Operations and Maintenance, Construction Services, Plan Review and Erosion Control, Watershed Management and MS4 Compliance, and General Expenses. These costs include both new initiatives and



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current program activities. The full discussion of costs and cost categories can be found in the Cost of Service section of the report.

Table ES-1 Summary of Six Year Program Costs

Cost Center	2006	2007	2008	2009	2010	2011
Engineering and Design	\$ 3,378,369	\$ 2,470,923	\$ 2,768,074	\$ 2,770,870	\$ 2,925,964	\$ 2,967,492
Operations and Maintenance	\$ 9,211,229	\$ 11,764,281	\$ 14,364,877	\$ 19,251,477	\$ 19,438,149	\$ 21,536,414
Plan Review and Erosion Control	\$ 1,398,133	\$ 1,813,331	\$ 1,844,062	\$ 2,154,266	\$ 2,301,023	\$ 2,335,067
Construction Services	\$ 10,209,454	\$ 11,570,331	\$ 16,253,445	\$ 14,886,726	\$ 15,633,245	\$ 18,289,920
Watershed Mgmt and MS4 Compliance	\$ 6,473,887	\$ 5,282,079	\$ 2,115,420	\$ 2,261,241	\$ 2,309,259	\$ 2,333,641
General Expenses	\$ 1,529,963	\$ 3,265,111	\$ 3,539,573	\$ 4,139,130	\$ 4,166,352	\$ 4,277,039
Total Program	\$ 32,201,034	\$ 36,166,056	\$ 40,885,451	\$ 45,463,710	\$ 46,773,991	\$ 51,739,574

Funding Options

During the initial study completed in July 2004, an assessment of funding options was completed and reported to the Board's Environmental Committee. At that time, the Consultant Team recommended the further review and analysis of creation of service-fee based revenue to support stormwater management in the long-term. During this phase of the assessment, the Consultant Team worked with staff and the citizen Stormwater Advisory Committee (SAC) to identify the criteria that should be used to establish an appropriate mix of revenue sources. The SAC provided the following input:

Principles for Funding Options
1. Distribute cost of services on the basis of demand for those services. (equity)
2. Recognize positive behaviors by land owners when they reduce impacts of discharges on peak flow and pollutant loading.
3. Dedicate funding to the objectives of the stormwater program so that funds cannot be redirected to other competing priorities. (sustainability)
4. Encourage greener development through the funding strategy.
5. Make the funding mechanism applicable across all property owners. (fairness)
6. Apply the funding strategy uniformly across the County.
7. Utilize bond debt to support the capital improvement program. (adequate)

Historically, the utilization of service fees for major infrastructure programs such as solid waste management, drinking water supply, and sanitary waste management have met the principles identified by the Committee. The Consultant Team recommends the use of a dedicated service fee, through the establishment of an enterprise fund or public utility.



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Cash Flow Analysis

The following table summarizes the cash flow analysis based on the following assumptions:

- The enterprise fund would be established in FY 2006 and funded through transfers from the General Fund while the utility structure is completed and the Master Account File is generated.
- The first billing would occur in June 2006 utilizing the Real Estate Tax billing system.
- The rate would remain constant for two fiscal years, with adjustments in rates in FY 2009 and FY 2011.
- An update of the rate model would occur in FY 2010 to validate the program needs and to project the cash demands for the next five year period.

Table ES-2 Preliminary Rate

Fiscal Year	Rate per Billing Unit	
	Monthly	Annually
2007	6.46	77.52
2008	6.46	77.52
2009	7.40	88.80
2010	7.40	88.80
2011	7.95	95.40



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Table ES-3 Cash Flow Analysis
Stormwater Cost of Service Analysis/Rate Model
Revenue/Expenditure (Cash Flow) Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses					
Annual Operating Expense	\$ 21,002,285	\$ 23,138,099	\$ 27,190,839	\$ 28,504,712	\$ 28,448,907
Annual Capital Expense and Bonded Capital Expense	\$ 15,470,000	\$ 18,070,000	\$ 18,650,000	\$ 18,650,000	\$ 23,650,000
<i>Subtotal, with Inflation</i>	\$ 36,472,285	\$ 41,971,656	\$ 46,738,137	\$ 48,095,368	\$ 53,037,721
Bond Sale Costs and Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -
Bond Debt Service Coverage	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Fund Balance and Emergency Reserve- Unappropriated	\$ 2,100,228	\$ 618,855	\$ 131,387	\$ (5,581)	\$ 93,881
Total: Expenses	\$ 38,572,513	\$ 42,590,512	\$ 46,869,524	\$ 48,089,787	\$ 53,131,602
Other Revenues					
Funds Carried Forward	\$ -	\$ 1,492,967	\$ 44,370	\$ 618,161	\$ 845,450
Bond Sales Receipts and Associated Funds	\$ -	\$ -	\$ -	\$ -	\$ -
Other Fees and Charges (Pro Rata)	\$ 5,400,000	\$ 5,400,000	\$ 5,400,000	\$ 5,400,000	\$ 5,400,000
Interest Income	\$ 420,046	\$ 462,762	\$ 543,817	\$ 570,094	\$ 568,978
Recovered Delinquencies	\$ -	\$ 332,542	\$ 388,550	\$ 396,321	\$ 434,292
Other Resources (Fees for E&S)	\$ 956,874	\$ 992,278	\$ 1,028,993	\$ 1,067,065	\$ 1,106,547
Total: Other Revenues	\$ 6,776,920	\$ 8,680,550	\$ 7,405,730	\$ 8,051,642	\$ 8,355,267
Service Fee Revenue Requirement	\$ 31,795,594	\$ 33,909,962	\$ 39,463,795	\$ 40,038,146	\$ 44,776,335
Revenue Stream Reduction Allowances					
Delinquencies and Bad Debt	\$ 343,181	\$ 350,045	\$ 409,000	\$ 417,180	\$ 457,150
Offsets					
Credits	\$ 686,362	\$ 700,089	\$ 409,000	\$ 417,180	\$ 457,150
Total: Revenue Reduction Allowances	\$ 1,029,543	\$ 1,050,134	\$ 817,999	\$ 834,359	\$ 914,300
Adjusted Service Fee Revenue Requirement	\$ 32,825,137	\$ 34,960,096	\$ 40,281,794	\$ 40,872,505	\$ 45,690,635
Estimate of Service Fee Needed/Year					
Annualized ERU Revenue Requirement	\$ 32,825,137	\$ 34,960,096	\$ 40,281,794	\$ 40,872,505	\$ 45,690,635
Number of ERU	442,700	451,554	460,585	469,797	479,193
Estimated Monthly Charge per ERU	\$ 6.18	\$ 6.45	\$ 7.29	\$ 7.25	\$ 7.95
Service Fee Recommendation					
Recommended Monthly Charge per ERU	\$ 6.46	\$ 6.46	\$ 7.40	\$ 7.40	\$ 7.95
Estimated Annual ERU Revenue	\$ 34,318,104	\$ 35,004,466	\$ 40,899,955	\$ 41,717,954	\$ 45,714,985
Estimated Year-end Revenue Surplus (Deficit)	\$ 1,492,967	\$ 44,370	\$ 618,161	\$ 845,450	\$ 24,351
Available Funds for Appropriation in Following Year	6.5%	0.2%	2.2%	3.0%	0.1%

Impacts of Service Fees on Various Properties in the County

After completion of the preliminary rate analysis, the Consultant Team evaluated the impact of the use of service fees on various properties in the County. The use of service fees, based on demand as measured by the presence of imperviousness on each property, shifts the burden to those who place the *greatest demand for County services*. Several properties were evaluated to demonstrate the shift from a “value” basis for supporting stormwater (property tax) to a fee basis (imperviousness). The data below assumes the following:

- A tax rate of \$1.03
- The value of the property for tax evaluation is based on the Department of Tax Administration’s data, provided in March 2005.
- The number of billing units for the fee estimate is based on evaluation of imperviousness taken from current County aerial photography and digitally measured for each property studied.
 - The billing unit is 3,398 square feet of imperviousness.
 - The annual fee is \$77.52 per ERU.



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- The estimated tax bill is calculated using a formula of “assessment divided by 100, multiplied by \$1.03.”
- The portion of the tax bill for stormwater is based on the formula:
 - estimated tax bill divided by 103 to establish what the value of one cent is for their bill;
 - take the value of one cent raised and multiply by the number of cents necessary to fund the stormwater program (total budget divided by \$17.9 million – the amount one cent is projected to raise in FY 2006, County-wide).

Table ES 4 – Comparison of Property Tax to Fee Revenues

Property	Est. 2005 Tax Bill Based on \$1.03 Rate	Portion of Potential Tax for SW	Est. Fee \$77.52 Annually Per ERU
Fair Oaks Mall	\$3,144,778	\$ 58,847	\$ 81,241
Tysons Park Inc	\$ 595,140	\$ 11,136	\$ 5,891
Capital One Bank Bldg.	\$1,529,204	\$ 28,615	\$ 15,890
Lord of Life Lutheran Church	none	none	\$ 1,402

The data samples represent three commercial buildings and a church. Two of the three commercial buildings are multi-storied and have a significant tax valuation. The third commercial property is a shopping center (Fair Oaks Mall) whose characteristics include large open parking areas, on flat-lots, and a linear building foot-print. The Church was included to demonstrate that properties currently not paying into the property tax pool of resources would be included in a fee-based revenue source. The shift in burden is representative of the funding principle ***that the amount any property pays for stormwater services should be driven by demand or need for service rather than by value of the property.*** This principle was defined by the Stormwater Advisory Committee as one important factor in determining how to fund the stormwater program.

The Washington Post provided a comparison of single family home property valuations for Fairfax County. The data was used to evaluate the shift in revenue generation from a real estate tax to a fee. The same approach was used to determine the amount of the tax bill dedicated to stormwater. The estimated fee utilizes a fixed fee for single family residential properties. This is a key policy decision that would need to be made, if the Board of Supervisors acts to create a utility. Data on imperviousness for each parcel is not currently available.



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Table ES 5 – Comparison of Property Tax to Fees for Residential Property

Area	Average Valuation	2005 SW Portion of Tax Bill	Estimated Fee
Annandale	\$383,488	73.91	77.52
Burke	\$373,686	72.03	77.52
Chantilly	\$425,192	81.95	77.52
Clifton	\$579,342	111.65	77.52
Fairfax Station	\$639,809	123.31	77.52
Great Falls	\$770,709	148.54	77.52
Lorton	\$294,696	56.80	77.52
McLean	\$755,539	145.63	77.52
Oakton	\$605,294	116.66	77.52
Reston	\$362,440	69.87	77.52
Springfield	\$362,725	69.93	77.52

In both commercial and residential properties, the examples show the impact on each property owner of the decision to use property value versus demand (as measured by imperviousness). Equity and fairness can be more easily demonstrated through the use of fees than property tax.

Recommendations of the Consultant Team:

It is recommended that the stormwater management program as defined through this assessment be enhanced over the next decade to take positive steps for implementation of water quality and water quantity protection measures that will contribute to a sustainable quality of life for all of Fairfax County.

It is the recommendation of the Consultant Team that the County establish a stormwater enterprise fund for FY 2006 and that during the first year of operation the resources of the fund be supported by the General Fund. During FY 2006, the stormwater utility fee will be fully analyzed and a schedule of rates will be established by the Board of Supervisors during their budget adoption for FY 2007. It is further recommended that the General Fund be relieved of the burden to support the stormwater program in FY 2007, with a property tax reduction as appropriate.

This recommendation is supported by the guiding principles identified by the Stormwater Advisory Committee. The shift from General Fund support to an enterprise fund will



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meet the long-term needs for a stable, equitable, adequate and fair approach to resource generation for the program. In addition, it is recommended that the program of Pro Rata Shares be eliminated and a new program of in-lieu-of-construction fees be established to provide for developer contributions to regional facilities when the site under development is better served through a regional solution rather than through on-site controls.

It is recommended that a program of credits be established as well as a process for appeal and fee-adjustment, both of which need to be created during the FY 2006 year of implementation. Credits are an important component of an effective user-fee system, recognizing the contributions of the private property owners in the overall performance of the drainage system. Credits should be considered for both water quality and water quantity protection. Consideration should be given for credits that address non-structural as well as structural Best Management Practices that support the overall goals of the stormwater program.